REMARKS

Claims 8-12, 14 and 15 are pending in this application. By this Amendment, claims 8 and 14 are amended, and claim 15 is added. The amendments and added claim introduce no new matter. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The Office Action, in paragraph 3, rejects claims 8 and 12 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,649,561 to Sangiovanni et al. (hereinafter "Sangiovanni"); and in paragraph 5, rejects claims 9-11 and 14 under 35 U.S.C. §103(a) as being unpatentable over Sangiovanni in view of U.S. Patent No. 6,887,816 to Tanaka et al. (hereinafter "Tanaka"). These rejections are respectfully traversed.

Without conceding the propriety of these rejections, and solely to advance prosecution of this application, claim 8 is amended to recite a catalyst carrier comprising a cordierite honeycomb structure having a plurality of cells; and a pre-coat layer formed on the walls of the cells, wherein the pre-coat layer comprises titanium oxide (TiO_2) in an amount of at least 30% so as to protect the walls from an alkali and/or an alkali earth metal when used for purifying an exhaust gas. Claim 14 is similarly amended. Sangiovanni does not teach, nor can it reasonably be considered to have suggested, this combination of features.

For example, Sangiovanni does not disclose the pre-coat layer comprises titanium oxide (TiO_2) in an amount of at least 30% so as to protect the walls from an alkali and/or an alkali earth metal when used for purifying an exhaust gas. Sangiovanni teaches a titania-coated honeycomb catalyst for the ultraviolet-photocatalytic oxidation of organic pollutants flowing through a cell (Abstract). Sangiovanni, however, does not teach, nor can it reasonably be considered to have suggested, to protect the walls from an alkali and/or an alkali earth metal, as recited in claims 8 and 14.

As another example, Sangiovanni does not disclose the pre-coat layer comprises titanium oxide (TiO_2) in an amount of at least 30%. The Office Action concedes that Sangiovanni does not explicitly disclose this feature. However, the Office Action asserts that such feature would have been inherent. To establish inherency, the missing descriptive matter must necessarily be present in the thing described in the reference. Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Sangiovanni teaches the loading of the titania powder in the titania slurry is maintained in the range from about 20 weight % to about 30 weight % (Claim 7). While Sangiovanni apparently teaches an upper extreme value, about 30 weight %, Sangiovanni does not disclose the specific values of the claimed range of at least 30%. In this regard, the Office Action has not provided any objective evidence of why the claimed range of at least 30% would necessarily flow from the teachings of Sangiovanni.

MPEP §2131.01 states "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (emphasis added) *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). This standard is not met here with respect to the rejection of claim 8, and the similar features recited in claim 14, for at least the reasons set forth above.

Further, the claimed range would not have been obvious in view of Sangiovanni because Applicants have demonstrated the unexpected results and criticality of the pre-coat layer comprises titanium oxide (TiO_2) in an amount of at least 30%. For example, Applicants disclose that when a content ratio of TiO_2 is less than 30%, the effect of inhibiting the reaction with the ceramic substrate becomes insufficient, and the ceramic substrate unfavorably easily deteriorates (page 4, lines 7-11). Additionally, Applicants disclose in

Table 1 several examples of catalyst carriers, for example, Example 1, with the claimed content ratio of TiO_2 as compared to other examples with content ratios less than the claimed range, for example, Comparative Example 2, and according to conventional titanium layers. As seen in Table 1, a significant and unexpected reduction of crack generation is observed in catalyst carriers according to the combination of features recited in the pending claims. As such, to any extent that the Sangiovanni discloses a range that is considered to overlap the claimed range, Applicants have adequately rebutted any alleged *prima facie* case of obviousness based on these unexpected results.

Further, the subject matter of the pending claims are directed to, among other objects, reducing the reaction of alkali metals and/or alkaline earth metals in a catalyst carrier with a ceramic substrate of a honeycomb structure. In contrast, as discussed above, Sangiovanni is directed to a titania-coated honeycomb catalyst for the ultraviolet-photocatalytic oxidation of organic pollutants flowing through a cell. One of ordinary skill in the art when faced with the problems confronting Applicants, would not have turned to the disclosure of Sangiovanni to solve these problems. Additionally, based on the disclosure of Sangiovanni, one of ordinary skill in the would not have modified Sangiovanni in a manner to achieve a predictable result with any reasonable expectation of success.

Tanaka is not applied in a manner by the Office Action to overcome the above-identified shortfalls in the application of Sangiovanni to the subject matter of the pending claims.

For at least the foregoing reasons, the applied references do not teach, nor would they reasonably have suggested, the combinations of all of the features recited in independent claims 8 and 14. Additionally, claims 9-12 are also not taught, nor would they have been reasonably suggested, by the applied references for at least the respective dependence of these

claims, directly or indirectly, on an allowable base claim, as well as for the separately patentable subject that each of these claims recites.

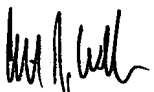
Accordingly, reconsideration and withdrawal of the rejections of claims 8-12 and 14 under 35 U.S.C. §§102(e) and 103(a) as being anticipated by, or unpatentable over, the applied references are respectfully requested.

The applied references also do not teach, nor can they reasonably be considered to have suggested, the alkali metal and/or alkaline earth metal is configured as a catalyst for NOx reduction contained in an exhaust gas from an engine, as recited in claim 15. As such, claim 15 is also considered to be allowable.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 8-12, 14 and 15 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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